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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,269	10/26/2001	Gabriel Nunez	UM-06645	3027

7590 02/06/2004

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EXAMINER	
WAX, ROBERT A	

ART UNIT	PAPER NUMBER
1653	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,269	NUNEZ ET AL.	
	Examin r	Art Unit	
	Robert A. Wax	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) 1-9,15-24 and 26 is/are withdrawn from consideration.

5)☒ Claim(s) 25 is/are allowed.

6)☒ Claim(s) 10-14 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-26 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-9, 16 and 18, drawn to DNA, vector and host cell, classified in class 435, subclass 320.1.

   II. Claims 10-14 and 25, drawn to protein, classified in class 530, subclass 350.

   III. Claim 15, drawn to method of producing variants of Nod2, classified in class 435, subclass 69.1.

   IV. Claim 17, drawn to antisense nucleic acid, classified in class 536, subclass 24.5.

   V. Claims 19-21, drawn to method of detection of a polynucleotide encoding Nod2, classified in class 435, subclass 6.

   VI. Claims 22-24, drawn to screening method, classified in class 435, subclass 7.1.

   VII. Claim 26, drawn to a compound capable of inhibiting the binding of Nod2 to RICK, classified in class 530, subclass 350.

The inventions are distinct, each from the other because of the following reasons:

2. The DNA of group I is related to the protein of group II by virtue of the fact that the DNA codes for the protein. The DNA molecule has utility for the recombinant production of the protein in a host cell. Although the DNA and the protein are related, since the DNA encodes the specifically claimed protein, they are distinct inventions because the protein product can be made by other and materially distinct processes, such as purification from the natural source. Further, DNA can be used for processes other than the production of protein, such as nucleic acid hybridization assays.

3. Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the DNA can be used for another materially different process such as a hybridization assay.

4. Inventions I and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the antisense strand is not

involved in coding for a protein; such coding is necessary to produce the protein using the sense strand. The subcombination has separate utility such as blocking expression of the sense strand in a pharmaceutical sense.

5. Inventions I and V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in a materially different process such as production of protein.

6. The DNA of Group I and the screening method of Group VI are related because the DNA encodes one of the proteins used in the screening method. Clearly, the DNA is not required for the practice of the screening method, nor are the DNA and protein disclosed as capable of use together. Thus, notwithstanding the relationship, the two inventions are patentably distinct.

7. Inventions I and VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the DNA of Group I and the compound of Group VII do not require each other for their practice; have separate utilities, such as use of the DNA of Group I to

produce protein versus use of the Group II compound to inhibit binding of Nod2 to RICK; are physically, chemically and biologically different from each other; and are subject to separate manufacture and sale from each other. These groups have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

8. Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the protein of Group II and the method of producing variants of Nod2 of Group III do not require each other for their practice; have separate utilities; are physically, chemically and biologically different from each other; and are subject to separate manufacture and sale from each other. These groups have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

9. The protein of Group II and antisense nucleic acid of Group IV are related because the sense strand of the nucleic acid encodes the protein. Clearly, the protein is not required for the use of the antisense nucleic acid, nor are they disclosed as capable of use together. Thus, notwithstanding the relationship, the two inventions are patentably distinct.

10. Inventions II and VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in a materially different process such as activation of NF-κB.

11. The protein of group II is related to the inhibitor of group VII by virtue of being the protein inhibited by the inhibitor. Although the protein and inhibitor are related due to the necessary steric complementarity of the two, they are distinct inventions because the protein can be used in other, materially different processes from the inhibitor such as in a pharmaceutical composition in its own right. Further, the protein and inhibitor are structurally and functionally distinct molecules with different amino acid compositions. Thus, the two inventions are patentably distinct.

12. Inventions III and IV-VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the method of producing variants of Nod2 of Group III and the antisense nucleic acid of Group IV, the method of detection of polynucleotide of Invention V, the screening method of Group VI and the inhibitor of Group VII do not require each other for their practice; have separate utilities; are physically, chemically and biologically different from each other; and are subject to separate manufacture and

sale from each other. These groups have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

13. Inventions IV and V-VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the antisense nucleic acid of Group IV and the method of detection of polynucleotide of Invention V, the screening method of Group VI and the inhibitor of Group VII do not require each other for their practice; have separate utilities; are physically, chemically and biologically different from each other; and are subject to separate manufacture and sale from each other. These groups have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

14. Inventions V and VI-VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the method of detection of polynucleotide of Invention V and the screening method of Group VI and the inhibitor of Group VII do not require each other for their practice; have separate utilities; are physically, chemically and biologically different from each other; and are subject to separate manufacture and sale from each other. These groups have acquired separate status in the art and separate fields of

search as further evidenced by their separate classification.

15. Inventions VI and VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the screening method of Group VI and the inhibitor of Group VII do not require each other for their practice; have separate utilities; are physically, chemically and biologically different from each other; and are subject to separate manufacture and sale from each other. These groups have acquired separate status in the art and separate fields of search as further evidenced by their separate classification.

16. During a telephone conversation with Tanya Arensen on December 19, 2004 a provisional election was made with traverse to prosecute the invention of Group II, claims 10-14 and 25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-9, 15-24 and 26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

17. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or**

otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

18. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

19. The claim for priority to Provisional application 60/244,289, filed October 30, 2000 is noted.

Information Disclosure Statement

20. The information disclosure statement filed September 16, 2003 has been considered. Please see the attached initialed PTO-1449.

Specification

21. The disclosure is objected to because of the following informalities: on page 7, line 6, "1A" should read "2A".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

22. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

23. Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims state that the protein is at least 90% (95% for claim 14) identical to SEQ ID Nos. 1 and 33. This is incorrect since SEQ ID Nos. 1 and 33 are DNA sequences. The proteins of claims 13 and 14 are encoded by DNA that is at least 90% (95% for claim 14) identical to DNA SEQ ID Nos. 1 and 33. Appropriate correction is required.

24. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

25. Claims 10-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for Nod2 protein itself, does not reasonably provide enablement for proteins that are 80%, 90% or 95% identical to Nod2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these

claims because practice of the claimed invention would require undue experimentation by an artisan of ordinary skill in the art.

The criteria for determining undue experimentation, summarized in *In re Wands* 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988), are: 1) the quantity of experimentation necessary, 2) the amount of direction or guidance presented, 3) the presence or absence of working examples, 4) the nature of the invention, 5) the state of the prior art, 6) the relative skill of those in that art, 7) the predictability or unpredictability of the art, and 8) the breadth of the claims. The court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404).

As stated above, claims 10-14 specify the protein to be encoded by DNA that is at least 80%, 90% or 95% identical to SEQ ID Nos. 1 and 33 and has at least one activity of Nod2. In order to determine what proteins are included in the scope of these claims one of skill in the art would have to generate DNA having the requisite degree of identity, express the DNA to get protein and then test for Nod2 activity. It is this effort that is considered to be undue experimentation.

Analysis of the Wands factors shows the following. 1) the quantity of experimentation necessary is very large since the number of possible DNA molecules falling within the specified level of identity is immense, 2) the amount of direction or guidance presented is essentially zero; the specification provides inadequate guidance to allow the skilled artisan to determine which of the myriad possible DNA molecules falling within the specified level of identity would be likely to exhibit one of the properties of Nod2, nor does the specification provide guidance regarding, for example, the domain structure of the protein, the location of the site which confers, for example, the capability to activate NF-κB, or sites of interaction with other proteins, cofactors or regulatory molecules. In order to predict with reasonable assurance the effect that the differences are likely to have on the protein, and thereby predict which different proteins will retain biological activity, the skilled artisan would require data regarding, for example, the molecular basis of the protein's activity, its secondary and tertiary structure and the relative importance of any domains of the protein in maintaining said activity, 3) The specification provides working examples of Nod2 binding NF-κB and RICK, but provides no working examples of proteins that differ by being encoded by DNA being 80%, 90% or 95% identical to SEQ ID Nos. 1 and 33, 4) the nature of the invention is the discovery of a new member of the Nod family of proteins, 5) the prior art contains no teaching of Nod2 except applicants' own art, 6) the level of skill in this art is very high, 7) the predictability of the properties of a protein encoded by DNA being 80%, 90% or 95% identical to SEQ ID Nos. 1 and 33 is low, and 8) the breadth of the claims is very large.

Thus, when all the Wands factors are considered together, the conclusion that the practice of the claimed invention would require undue experimentation is inescapable.

Allowable Subject Matter

26. Claim 25 is allowed. The prior art of record neither teaches nor suggests proteins having SEQ ID Nos. 2, 3 and 34.

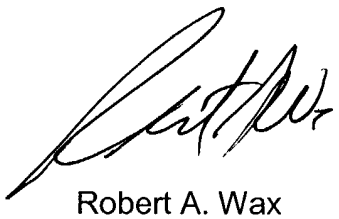
Conclusion

27. No claim is allowed.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Wax whose telephone number is (571) 272-0623. The examiner can normally be reached on Monday through Friday, between 9:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S. F. Low can be reached on (571) 272-0951. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert A. Wax
Primary Examiner
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